

**Innovation Disclosure**

Docket No.: 99RSS023
Ranking: APPROVED TO FILE

1. Innovator(s)

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2. Title of Invention

Use of Early DTMF Indication to Suppress DTMF From RTP Voice Packets

3. Problem Solved

The RTP protocol, which defines a packet format for packetized voice, states that DTMF signals should be removed from the packetized voice frames.

4. Previous Solutions

As DTMF detection takes a finite time, two previous solutions existed.

- 1) Delay constructed packets until sure there's no DTMF in them (adds unwanted delay)
- 2) Accept that a small amount of DTMF will be present, the length of time being equivalent to the DTMF detection delay.

5. Solution

Using signal processing techniques, an early DTMF indication is derived. This indication happens quickly, but is not totally reliable (gives false detections).

When this early DTMF indication occurs, the packets being constructed are stalled until the normal DTMF detector indicates whether there really is DTMF present. If DTMF is really present, the stalled packets are discarded. If it was a false alarm, the packets are released.

6. Differences/Advantages Over Previous Solutions

This new solution is an optimal compromise between the 2 previous solutions. Some DTMF is allowed into the voice stream, but much less than when waiting for full DTMF detect. and probably not enough for the end user to hear. Delay can be introduced by the system, but only when there is good reason to believe DTMF may be present, so the average delay added is much less than when delaying all packets until full DTMF detection is done.

7. Status of Innovation

Proprietary Information Rockwell International

1

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11. Innovator signature(s): (Do not use black ink)

____ Date _____
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2